

**Workshop**  
**ADVANCES IN DATA SCIENCE FOR BIG AND COMPLEX DATA**  
From data to classes and classes as new statistical units

**UNIVERSITY PARIS-DAUPHINE \***  
**January 10-11, 2019**

In all domains of human activity, we are more and more faced with the problem of understanding and extracting knowledge from standard, big and complex data, often multi-sources (as mixture of numerical, textual, image, social networks data). New tools are needed to transform huge data bases intended for management to data bases usable for Data Science tools. This transformation leads to the construction of new statistical units described by aggregate data in term of symbols (intervals, distributions, list, etc.) as single-valued data are not suitable because they cannot incorporate the additional information on data structure available in symbolic data. Data Science, considered as a science by itself, consists in general terms, in the extraction of knowledge from data. Symbolic data analysis (SDA) provides a new way of thinking in Data Science by extending the standard input to a set of classes of individual entities. SDA is an emerging area of Data Science based on aggregating individual level data into group-based summarized by symbols and developing Data Science methods to analyze them. At the crossroad of statistics, mathematics and computer science, it is ideal for the analysis of large and complex datasets, and has immense potential to become a standard methodology in the near future.

The aim of this workshop is to present recent advances in reasoning from data to classes and considering classes as new statistical units, to academic researchers and industrials in all domains where data are obtained and need to be analyzed for understanding them and improving decisions. After the lectures, you will be able to participate in recent software training, illustrated with simple examples, using your personal laptops.

Academics with mathematical, statistical and computer solutions to the problems raised by standard, complex and (or) massive data as well as industrials or laboratories wishing to present open problems concerning this type of data, are welcome to participate. Propositions must be sent as a one-page summary including references before December 15th, 2018, to: [datasciencejanv2019@gmail.com](mailto:datasciencejanv2019@gmail.com)

\* **Web site:** <http://vladowiki.fmf.uni-lj.si/doku.php?id=sda:meet:pa19>

**Place of the workshop:**

University Paris-Dauphine. Place du Maréchal de Lattre de Tassigny 757016 PARIS.

**Registration:** [datascience.sda2019@oniris-nantes.fr](mailto:datascience.sda2019@oniris-nantes.fr)

Please specify the participant's name with his institution, department and country.

\* Free of charge for registered participants, the number of places being limited.

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